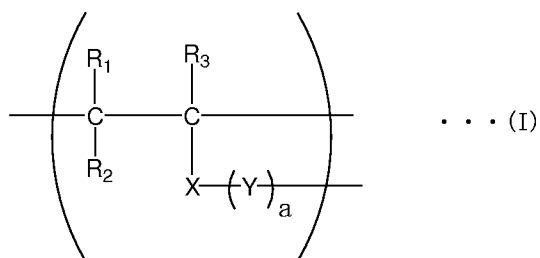


ABSTRACT

The aim of the present invention is to provide a multi-branched polymer, in which branch terminals can be easily modified and which have a high degree of branching and narrow dispersion. By polymerizing a compound having 2 or more polymerization-initiation sites and polymerizable unsaturated bonds with a living radical polymerization method using a metal catalyst, it is possible to produce a multi-branched polymer with narrow dispersion and a high degree of branching and having repeating units represented by the formula (I):



wherein R_1 to R_3 each independently represents hydrogen or a hydrocarbon group, R_1 may be bonded to R_3 to form a ring; X represents a connecting group having a valence of 3 or higher; Y may be the same or different and each represents a functional group which may have a halogen atom at a terminal thereof; and a is an integer of 2 or larger.